

Fossil Fuel Preliminary Subcategories and MACT Floor

**Boiler Work Group
9/16/98**

Overview to MACT Floor

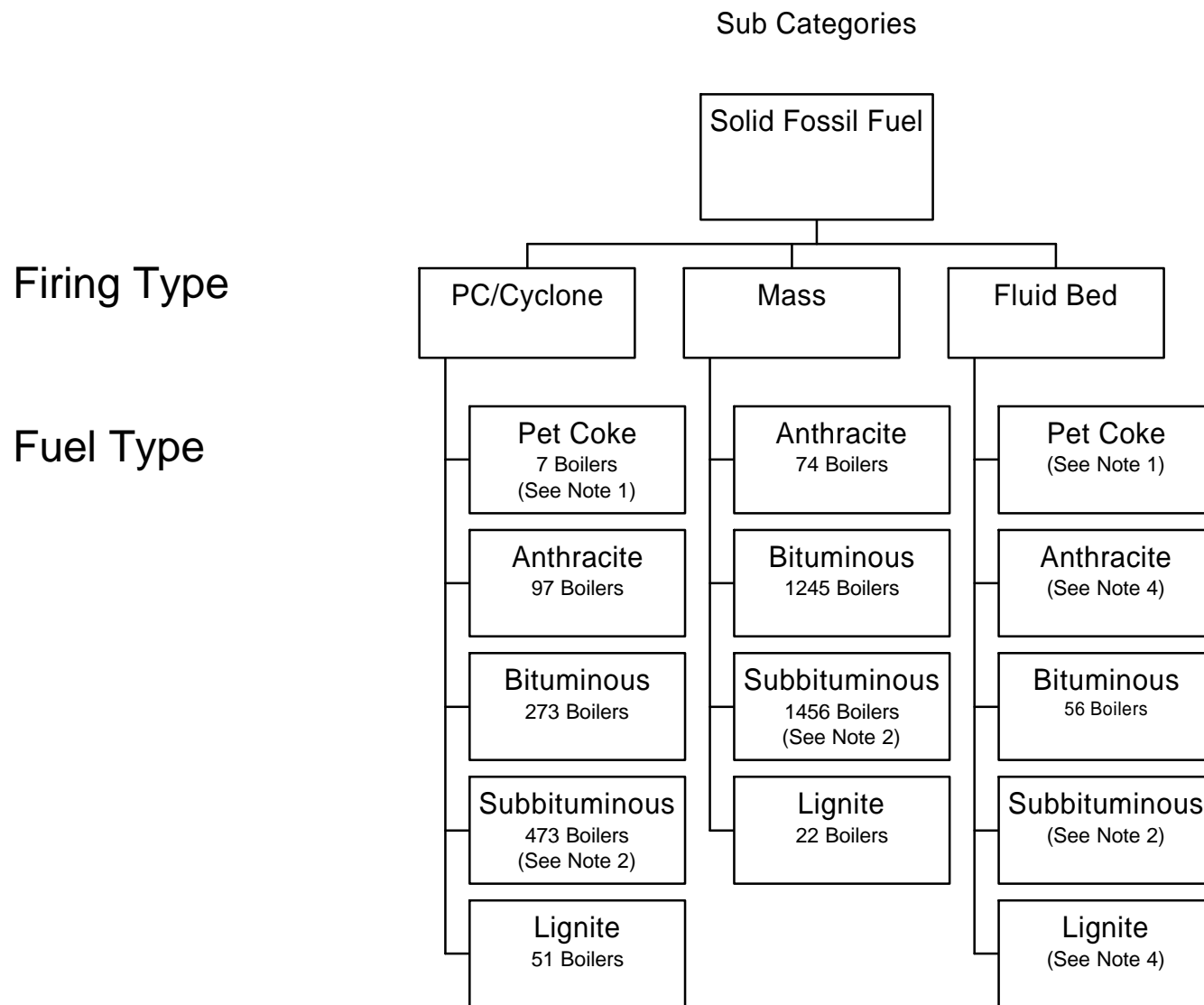
- **Key Definitions and Concepts**
- **Subcategorization**
- **Approach to MACT Floor**
- **Review of ICCR Boiler Inventory DB V. 3.0**
- **Review of ICCR Emissions DB**
- **Review of State Regs/Permits and RACT/BACT/LAER DB**
- **Final Conclusions**
 - **No MACT Floor For Controls**
 - **No HAP Emission Limits**

Key Definitions

- **Boiler**
- **Gas**
 - **Pipeline Gas/Wellhead Gas/LPG**
 - **Gas Derived From Oil, Petroleum, Petrochemical Processing - Not a Consensus**
- **Oils - Distillate and Residual**
- **Coal**
 - **Includes Anthracite, Lignite, Bituminous and Sub Bituminous, Petroleum Coke**

Subcategories

- **Gas**
 - **By Fuel - Similar Burner Designs**
- **Oils**
 - **By Fuel - Similar Burner Designs**
- **Solid Fossil Fuels**
 - **See Chart**



Note 1 34 Petroleum Coke Boilers were identified in the Inventory Database with no boiler type

Note 2 33 Subbituminous Boilers were identified in the Inventory Database with no boiler type

Note 3 404 Boilers were identified in the Inventory Database with no boiler type or fuel type

Note 4 No Boilers were identified in the Inventory Database for these types; These could exist

MACT Determination Methodology

- **Use Subcategories as Described**
- **Use Inventory DB V.3 to determine MACT Controls**
- **Use Emissions DB to Determine HAP Emission Limits**
- **Review RACT/BACT/LAER DB for Controls/HAP Limits**
- **Used top 6% of Technology as First Cut**
- **Review Databases for**
 - **Good Control Practices**
 - **Pollution Prevention**
- **Burn only Fossil Fuels.**
- **Only Specified Control/No Control Data Used in Technology Cutoffs**

Preliminary MACT Floor Determination for Fossil Fuel-Fired Boilers - V.3 DB

- **Gaseous Fossil Fuel Subcategory**
 - 42,582 boilers total
 - 18,321 boilers with control information
 - 177 boilers (0.97 %) may have applicable add-on controls
 - Some controls not believed to be applicable for boilers firing gaseous fuels
- **Conclusion: Considering only boilers with control information or those specifying 'no control' - < 6% of units have add-on control. No MACT Floor for Controls.**

Preliminary MACT Floor Determination for Fossil Fuel-Fired Boilers - V. 3 DB

- **Liquid Fossil Fuel Subcategory**
 - **Unheated fuel (Distillate Oil)**
 - **6604 boilers total**
 - **2623 boilers with control information**
 - **70 boilers (2.68 %) may have applicable add-on controls**
- **Conclusion: Considering only boilers with control information or those that specify 'no control' - <6% of units have add-on control. No MACT Floor for Controls.**

Preliminary MACT Floor Determination for Fossil Fuel-Fired Boilers -V. 3 DB

- **Liquid Fossil Fuel Subcategory**
 - **Heated fuel (Residual Oil)**
 - **7945 boilers total**
 - **4810 boilers with control information**
 - **264 boilers (5.50 %) may have applicable add-on controls**
 - **Some controls not believed to be applicable for boilers firing liquid fuels.**
- **Conclusion: Considering only boilers with control information or those that specify 'no control' - <6% of units have add-on control. No MACT Floor For Controls.**

Preliminary MACT Floor Determination for Fossil Fuel-Fired Boilers

- **Coal**
 - **Initial thinking to split by firing method:**
 - **Pulverized fuel/cyclone**
 - **Mass feed/stoker**
 - **Fluidized bed**
 - **Then Split By Fuel Type**
 - **MACT Floor Not Determined**
 - **Further refinement being evaluated**

Emissions DB Conclusions - Gas

- **Variable Data**
- **Percent of Data Not Representative of Large Enough Sector**
- **No Data to Evaluate Control Efficiencies**
- **Conclusion:**
 - **No Recommendation for HAP Emission Limit or Control Based on HAP Emission Limit**

Permit/Regs DB Conclusions - Gas

- **Permit Limit Information**
 - 17 Gas Fired Units of >42,000 had Permit Limits
 - No MACT Floor/Emission Limits Based On Permits
- **State Air Regulations**
 - No State Air Emission Regs. On HAPs
 - No MACT Floor/Emission Limit Based On State Regs
- **RACT/BACT/LAER Database**
 - No Gas Fired Units Had Permit Limits
 - No MACT Floor/Emission Limits Based On RACT/BACT/LAER Database

Emissions DB Conclusions - Oil

- **Data Inadequate to Identify Best Performing Group or HAPs Limits**
- **Some Coal Fired Controls Used on Oil Fired Systems**
- **Variable Data**
- **Conclusion:**
 - **No Recommendation for HAP Emission Limit or Control Based on HAP Emission Limit**

Permit/Regs DB Conclusions - Oil

- **Permit Limit Information**
 - 15 Fired Units of >14,000 had Permit Limits
 - No MACT Floor/Emission Limits Based On Permits
- **State Air Regulations**
 - No State Air Emission Regs. On HAPs
 - No Mact Floor/Emission Limit Based On State Regs
- **RACT/BACT/LAER Database**
 - <0.1% of Oil Fired Units Had Permit Limits
 - No MACT Floor/Emission Limits Based On RACT/BACT/LAER Database

Emissions DB Conclusions - Coal

- **Need More Work On Coal Data**
 - **Complex and Multiple combustion Combinations**

Rationale For MACT Floor - GCP/P2

- **GCP Techniques Evaluated - Gas/Oil**
 - **Fuel/Air Ratio**
 - **Maintenance**
 - **Tune-Up (State Regulations)**
- **Pollution Prevention (P2)**
 - **Boiler Efficiency Considerations**
- **NON CONSENSUS On No MACT Floor Based On GCP/P2**

Emission Limitations

- **Based On:**
 - **State Air Emission Limits (Permits/Regs)**
 - **ICCR Emission Database**
 - **RACT/BACT/LAER DB**
- **No Emission Limits Recommendations**

Fossil Fuel Boiler MACT Floor Conclusions

<u>Subcategory</u>	<u>CONTROLS</u>	<u>HAP Limitation</u>
Gas Fired Boilers	No MACT Floor	None
Oil Fired Boilers	No MACT Floor	None
Coal Fired Boilers	To Be Determined	To Be Determined

Summary of Results

Subcategory	Percent of Boilers Controlled*	Preliminary MACT Floor Determined for Existing Sources
Gas	0.97 %	No Add-On Control No HAP Limit
Liquid – Unheated	2.68 %	No Add-On Control No HAP Limit
Liquid - Heated	5.50 %	No Add-On Control No HAP Limit

* Some controls may not be applicable for boilers firing these fuels.